Troubleshooting Facts

Due to the integrated nature of laptops, troubleshooting notebook components is significantly harder than troubleshooting desktop components. The following table provides some troubleshooting guidelines to follow when working with laptop computers:

Component	Troubleshooting Tips
Power	To best troubleshoot power problems, it is important to understand the different sources of power for a notebook. • When your laptop is plugged into the wall, it is receiving power through a transformer. The purpose of a transformer is to convert the AC power from the outlet to DC power usable by the computer. Most transformers can work with both 110 or 220 volt power sources. • The other source of power for a laptop is the battery. Batteries wear out over time so you should expect to replace your battery every few years. It is best to never let a battery run extremely low because the life of a battery significantly decreases if it loses all of its charge. If there is a problem with your transformer, your computer will run off of your battery by default. For this reason, you should always check these components first. When troubleshooting power, verify that: • The cord from the AC outlet to the transformer is correctly plugged into both the wall and the transformer unit. Move it around to see if a more secure connection can be made. • The LED light on your transformer is lit. If it isn't lit, this means that your point of failure is between the outlet and the transformer. • Your battery is sufficiently charged. If the battery reads it is fully charged in Windows, disconnect your laptop from its power source. If the battery lasts only a short amount of time, you can assume that your battery needs to be replaced. After you have verified that the above components are connected and working properly, you might want to look into replacing your AC Adapter. Though AC adapters are usually very durable and last a long time, they do still fail on occasion, in which case they will need to be replaced.

Video	The most common problems with video on a laptop are:
	
	• Dead spots are areas on your screen (sometimes entire rows or columns of pixels) that no longer work. This means that your LCD assembly is no longer functioning and you will need to replace it. Though it is usually best to buy a whole new system, it is possible to buy a new LCD assembly and install it to an existing laptop. This is usually very expensive and will probably void your warrantee, but it is an option.
	• A bad backlight may cause a display to become dim. It is important to note that dimming the backlight is a power saving method used by laptop computers to conserve power, so you should always verify that this isn't the cause for a dimmed screen before choosing to replace the backlight.
	• A flickering screen can be caused by a faulty backlight or inverter. Replacement parts can be purchased from your laptop's manufacturer.
	• If your laptop has no display at all,
	  ○ Press the Fn (Function) and the appropriate display key to switch the display output to the laptop monitor.
	  ○ If the built-in monitor isn't working, connect an external monitor to the laptop. Use the Fn keys to direct output to the external monitor.
	  ○ If you don't get a display on either monitor, you can assume that there is a problem with the video card. Repairing the video card typically means replacing the motherboard.
	  ○ If the display renders on the external monitor but still won't render on your laptop, then you can assume that there is a problem with your LCD display. If this is the

	case, you should verify that: ■ Your LCD cutoff switch is working. Sometimes the switch can get stuck in the off position, thus preventing the display from being sent to the LCD. ■ There aren't cracks in the bezel around your LCD. This can be an indicator that your LCD has been damaged. ■ The power bundles that go from your laptop to the LCD are not damaged or cracked. You must remove the bezel around the LCD to inspect the power bundles. If you know that your LCD needs to be replaced but you don't have the resources to buy a new LCD or a new laptop, you can consider converting your laptop into a desktop system by hooking it up to an external monitor permanently. If the video card is bad, you might be able to use a remote solution, such as Remote Desktop, to connect to the laptop from an external system.
Portable Components	The most common portable components used with laptop systems are keyboards, mice, digitizer pads, and antennae. The following list suggests troubleshooting methods to use when working with these components: ● A bad keyboard can be tested by plugging in an external keyboard to your laptop and seeing if it works. If it does, you can assume that your laptop keyboard is malfunctioning and needs to be replaced. ● Most notebook systems have features that cause keyboard keys to perform alternate functions, such as emulating 10-key functionality by turning on the NumLock. Before troubleshooting other problems, make sure that no special features are enabled that may cause keys to perform alternate tasks. ● Mouse malfunction on a laptop is usually caused by the installation of an incorrect driver. Good indicators that the incorrect driver has been installed are if the laptop mouse's sensitivity isn't consistent or if the mouse doesn't recognize a double tap. If the wrong driver has been installed, the new driver should be downloaded from the manufacturer's Web site. A laptop mouse component can be replaced if it is broken, but you can also attach an external mouse instead. ● A digitizer pad is used in laptop and PDA systems to receive input. Input is written onto the pad with a stylus pen, then those motions are transferred into data that is processed by the system. If this pad becomes scratched, the laptop or PDA cannot receive input correctly. This is most easily resolved by buying a cleaning product called *Screen Clean*. This product removes the top layer of plastic from the digitizer pad, thus removing existing scratches and giving the pad a fresh surface. However, you will need to replace the digitizer pad or buy a new system if the scratch is too deep. ● Another problem that digitizer pads face is called *drift*. Drift occurs when a pad's pressure sensors need to be realigned. If this is the case, your digitizer pad needs to be recalibrated. It is always best to address this issue before it progresses to the point that you can't access the recalibration utility. ● Though laptop antennae are supposed to be omni-directional, they sometimes need to be re-oriented to get the best reception. This can usually be done by moving the laptop until the reception picks up. If redirecting the antennae doesn't work and wireless reception is consistently poor, the antennae may need to be replaced. ● Many laptops include a switch that turns the wireless network card on and off. When troubleshooting wireless network connectivity, make sure the switch is turned on.